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DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket No. EERE-2009-BT-TP-0004]

RIN 1904-AB94

Energy Conservation Program for Consumer Products and Certain Commercial and Industrial Equipment: Test Procedures for Residential Central Air Conditioners and Heat Pumps

AGENCY: Department of Energy, Office of Energy Efficiency and Renewable Energy.

ACTION: Extension of public comment period.

SUMMARY: This document announces a reopening of the comment period for interested parties to submit comments on the October 24, 2011 supplemental notice of proposed rulemaking for residential central air conditioner and heat test procedures. The comment period is extended until **[INSERT DATE 30 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]**.

DATES: The U.S. Department of Energy (DOE) will accept comments, data, and information regarding the supplemental notice of proposed rulemaking for residential central air conditioner

and heat test procedures received no later than **[INSERT DATE 30 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Any comments submitted must identify the Supplemental Notice of Proposed Rulemaking for Test Procedures for Residential Central Air Conditioners and Heat Pumps and provide docket number EERE–2009–BT–TP–0004 and/or RIN number 1904-AB94. Comments may be submitted using any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.
- E-mail: Brenda.Edwards@ee.doe.gov. Include docket number EERE–2009–BT–TP–0004 and/or RIN 1904-AB94 in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format and avoid the use of special characters or any form of encryption.
- Postal Mail: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. Please submit one signed original paper copy.
- Hand Delivery/Courier: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L’Enfant Plaza, SW., 6th Floor, Washington, DC 20024. Please submit one signed original paper copy.

Docket: The docket is available for review at www.regulations.gov, including Federal Register notices, public meeting attendee lists and transcripts, comments, and other supporting

documents/materials. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

A link to the docket web page can be found at:

<http://www.regulations.gov/#!docketDetail;dct=FR%252BPR%252BN%252BO%252BSR;rpp=10;po=0;D=EERE-2009-BT-TP-0004>. This web page contains a link to the docket for this notice on the www.regulations.gov site. The www.regulations.gov web page contains simple instructions on how to access all documents, including public comments, in the docket.

For further information on how to submit a public comment, review other public comments and the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by email:

Brenda.Edwards@ee.doe.gov.

FOR FURTHER INFORMATION CONTACT:

Mr. Wes Anderson, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-7335. Email: Wes.Anderson@ee.doe.gov.

Ms. Jennifer Tiedeman, U.S. Department of Energy, Office of the General Counsel, GC-71, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 287-6111. Email: Jennifer.Tiedeman@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

On October 24, 2011, the U.S. Department of Energy (DOE) published a supplemental notice of proposed rulemaking (SNOPR) in the Federal Register (76 FR 65616) which proposed amendments to the laboratory test steps and calculation algorithm that would be used to determine off-mode power consumption for residential central air conditioners and heat pumps. Specifically, the SNOPR proposed to measure a system's off-mode power consumption at two temperatures, 82 °F and 57 °F, and then average the two measurements to determine the system's off-mode rating. The SNOPR required that interested parties submit any written comments by November 23, 2011. In response to the SNOPR, the California State Investor Owned Utilities (CA IOUs), which is appended to this notice, expressed concern about a potential loophole regarding the 57 °F test point in DOE's proposal. With the lower test point at 57 °F, it is possible for a system to be controlled in such a manner that the crankcase heater is not on at either test point, but comes on just below 57 °F. The result would be an underestimation of a system's energy consumption because the energy consumption of the crankcase heater would not be included in either measurement.

Consequently, the CA IOUs recommended an alternative approach to the test procedure proposed in the SNOPR. According to this approach, manufacturers would be required to specify the temperatures at which a crankcase heater turns on and off, and then to run one off-mode test 3-5 °F below the point at which the crankcase heater turns on and the other off-mode test 3-5 °F above the temperature at which the crankcase heater turns off. (CA IOUs, No. 33 at p. 2)

American Council for an Energy-Efficient Economy (ACEEE), the Appliance Standards

Awareness Project (ASAP), Northwest Energy Efficiency Alliance (NEEA) and Northwest Power Conservation Council (NPCC) all supported this approach. (ACEEE & ASAP, No. 34 at p. 2; NEEA & NPCC, No. 35 at p. 3)

DOE believes that this proposed approach is advantageous for multiple reasons. It will prevent the potential inaccuracies involved with requiring 57 °F as the only test point in the DOE procedure. If DOE requires just one temperature set point for all tested equipment, a potential exists that manufacturers may choose to change the temperature at which the crankcase heater turns on solely for testing purposes, resulting in an inaccurate power consumption measurement. Further, different crankcase heater manufacturers may employ different control strategies, which vary with temperature. The approach recommended by CA IOUs provides additional flexibility by allowing manufacturers to design controls schemes for the crankcase heaters at whatever temperature they feel is necessary to avoid damage to the compressor in cold outdoor temperatures.

While this approach will not change the tested results in the SNOPR, it will help to reduce the complexity of test procedure because the crankcase heater will be on for one temperature test point and off for the other. Further, depending on the manufacturer's specified crankcase heater on and off temperatures, the testing burden may be reduced under this recommended test method as compared to the method proposed in the SNOPR. Consequently, DOE is strongly considering the adoption of this approach and specifically seeks comment on any aspect of this approach.

In order to provide interested parties with adequate time to review and respond to this alternative test method as outlined by the CA IOUs in section 1 of their comment, DOE has determined that a re-opening of the public comment period is appropriate and has printed the CA IOUs comment concurrently with this notice in the Federal Register. DOE will consider any comments received on **[INSERT DATE 30 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]**, and deems any comments received between November 23, 2011 and **[INSERT DATE 30 DAYS FROM PUBLICATION IN THE FEDERAL REGISTER]** to be timely submitted.

Further Information on Submitting Comments

Under 10 CFR Part 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit two copies: one copy of the document including all the information believed to be confidential, and one copy of the document with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include (1) a description of the items, (2) whether and why such items are customarily treated as confidential within the industry, (3) whether the information is generally known by or available from other sources, (4) whether the information has previously been made available to others without obligation concerning its confidentiality, (5) an explanation of the competitive injury to the submitting person which would result from public disclosure, (6) when

such information might lose its confidential character due to the passage of time, and (7) why disclosure of the information would be contrary to the public interest.

Issued in Washington, DC, on December 14, 2011.

Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

November 22, 2011

Ms. Brenda Edwards, EE-41
Office of Energy Efficiency and Renewable Energy
Energy Conservation Program for Consumer Products
U.S. Department of Energy
1000 Independence Avenue, SW.
Washington, DC 20585-0121

Docket Number: EERE-2009-BT-TP-0004
RIN: 1904-AB94

Dear Ms. Edwards:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E) and Southern California Edison (SCE) in response to the Department of Energy (DOE) Supplementary Notice of Proposed Rulemaking (SNOPR) for the Off Mode Test Procedure for Residential Central Air Conditioners and Heat Pumps.

The signatories of this letter represent some of the largest utility companies in the Western United States, serving over 29 million customers. As energy companies, we understand the potential of appliance efficiency standards to cut costs and reduce consumption while maintaining or increasing consumer utility of the products. We have a responsibility to our customers to advocate for standards that accurately reflect the climate and conditions of our respective service areas, so as to maximize these positive effects.

We acknowledge the difficulty faced by the Department to finalize test method procedures for Residential Central Air Conditioners and Heat Pumps given the lack of available data and engineering analysis applied to the development of these test methods. We are concerned that the test procedure revisions presented in this SNOPR would not encourage innovative design of the heating system in off-mode and are misleading to consumers since reported values are not indicative of actual off-mode energy use.

Therefore, we ask DOE to postpone finalizing the test procedure so that more engineering analysis and data can be provided by the PG&E, SCE, the efficiency advocates, and other stakeholders to inform DOE on accurate updates to the test procedure.

The current test procedures focus on wattage and simple work-arounds to account for *potentially* more efficient designs, such as those with multiple compressors. We believe that the test procedure should calculate energy use, as opposed to power consumption associated with off-mode since the run time in off-mode for these units is substantial. It is possible that units with slightly more power consumption levels in off mode consume less overall energy since some of those controls serve to reduce run-time; design strategies like these are not only overlooked, but not encouraged with this type of measurement of off-mode power.

Moreover, we believe that these test method procedures may be substantially improved upon with more data gathering and engineering analysis, supported by the CA IOUs, other energy efficiency advocates, ASHRAE, and AHRI. We suggest that DOE conduct market analysis to provide a better understanding across a range of products the temperature set points for which the crankcase heater turns on and off. We also suggest DOE collect actual test data using the test procedures on an array of products to understand anticipated outputs.

If DOE plans to move forward with the proposal in the SNOPR, we urge DOE to consider the following recommendations:

1) Manufacturers should report ambient air temperature points for which the crankcase heater is on and off, and use those points when calculating off-mode.

We are concerned that manufacturers could game the test procedures for off-mode power consumption by designing crank case heaters that operate outside the assumed bound for the crank-case heater being on at an ambient air temperature of 57 degrees Fahrenheit (F). Moreover, we think the test procedure would be more accurate if manufacturers tested their products at the points at which the crankcase heater is certain to be on (P2) and off (P1). Thus we recommend that DOE require that manufacturers report these values, and then establish the test temperature to be 3-5 degrees F below the point at which it turns on, and 3-5 degrees above the point at which it turns off.

2) Instead of applying a simple average to P1 & P2 to calculate off-mode power draw, DOE should apply a weighted average reflective of the amount of time the crankcase heater is on and off.

We are concerned that a simple average of P1 & P2 could drastically under represent off-mode power draw. Using National Oceanic and Atmospheric Administration (NOAA)¹ data on temperature averages between 1971-2000 for 100 U.S cities, we found that 54% of the tested sample had average annual temperatures below 57 degrees F for the months of January, April, and October, or simplifying the matter, 3 out of 4 seasons or 75% of the year. If we assume that the majority of these units are located in uncooled and unheated spaces then we may also assume that 75% of the time the unit will operate under P2 (on) conditions, and 25% of the time it will operate under P1 (off) conditions. We recommend that DOE adopt this weighted average or conduct further testing to determine how often a crankcase heater is on versus off at different ambient temperature ranges and apply national average temperatures across the seasons to determine an appropriate weighted average.

¹ <http://www.infoplease.com/ipa/A0762183.html>, Date Accessed: 11/14/11

3) DOE should not adjust the off-mode power draw for systems with multiple compressors or apply a scaling factor for extra-large systems since this would not represent actual off-mode power consumption.

We strongly recommend against the use of a scaling factor for extra-large units and for systems with multiple compressors since this would under represent the actual power associated with off-mode. While we understand that DOE does not want to penalize units that *may* have more energy efficient designs, we do not think that it is appropriate to apply this work-around to the measurement of off-mode. The merits of the *potentially* increased efficiency during run-mode ought to be captured in the run-mode test method, and not in the off-mode calculation. Moreover, we are concerned that these changes will make it easy for almost any unit on the market to meet the standard, thereby negating the point of a standard in the first place. Finally, the test procedure should be designed to report the actual value of off-mode. These values should be evaluated in a future standards rulemaking.

For these reasons, we strongly encourage DOE to revisit this test method with the help from stakeholders in the rulemaking to develop more appropriate test procedures. For instance, there has been discussion at utilities to conduct indepth testing of heat pumps and central air conditioning units in the coming months. We ask that DOE seriously consider postponing this final rule to assess stakeholder interest in improving the test method.

In conclusion, we would like to reiterate our support to DOE for updating the test procedures for residential central air conditioners and heat pumps. We thank DOE for the opportunity to be involved in this process and encourage DOE to carefully consider the recommendations outlined in this letter.

Sincerely,

Rajiv Dabir
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Pacific Gas and Electric Company

Ramin Faramarzi, PE
Manager, Technology Test Centers
Southern California Edison
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